Advanced Surveying MCQ Question Answer

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Question: 1. Pick up the incorrect statement from the following. High oblique photographs

Option A. May have tilt up to 30°
Option B. May include the image of the horizon
Option C. May not include the image of the horizon
Option D. None of these

Question: 2. Pick up the correct statement from the following:

Option A. Sidereal time at any instant is equal to the hour angle of the first point of Aries
Option B. Local sidereal time of any place is equal to the right ascension of its meridian
Option C. Sidereal time is equal to the right ascension of a star at its upper transit
Option D. All the above

Question: 3. If **θ** and **δ** be the latitude of a place and declination of a star respectively, the upper culmination of the star will be north of zenith if its zenith distance, is

Option A. δ - θ
Option B. θ - δ
Option C. θ + δ
Option D. (θ + δ)/2

Question: 4. The difference of parallax for a given difference in elevation is independent of

Option A. Focal length of the camera
Option B. Overall size of the photo graphs
Option C. Percentage of overlap
Option D. All the above

Question: 5. The value of geo-centric parallax to be added to the observed altitude of sun is

Option A. 9 cos α
Option B. 9 sin α
Option C. 9 tan α
Option D. 9 cot α

Question: 6. A star in northern sphere is said to transit

Option A. When its altitude is maximum
Option B. When its azimuth is 180°
Option C. When it is in south
Option D. All the above

Question: 7. Pick up the correct statement from the following:

Option A. Ursa Minor's remains always north of pole star
Option B. Polar star remains always north of Polaris
Option C. Polaris remains always north of Ursa Minor's
Option D. Ursa Minor's pole star and Polaris are the names of the same star

Question: 8. The average eye base is assumed as

Option A. 58 mm
Option B. 60 mm
Option C. 62 mm
Option D. 64 mm

Question: 9. Equation of time which is the difference between apparent solar time and mean solar time at any instant, vanishes during one year

Option A. Once
Option B. Twice
Option C. Thrice
Option D. Four times

Question: 10. Pick up the correct statement from the following:

Option A. The measured stereoscopic base of photographs is obtained by dividing the air base in metres by the mean scale of the photograph
Option B. The difference between the absolute parallax of two points depends upon the difference in their elevations
Option C. The line joining the principal point of a photograph and the transferred principal point of the adjoining photograph, is called stereoscopic base
Option D. All the above

Question: 11. The parallax equation $\Delta p = Bm\Delta h/H - h$ is applicable to entire overlap of the photographs only if parallax is measured

Option A. Normal to base line
Option B. Parallel to base line
Option C. Both (a) and (b)
Option D. Neither (a) nor (b)

Question: 12. Pick up the correct statement from the following:

Option A. Centre of the celestial sphere is taken as the position of the observer
Option B. Centre of the celestial sphere is taken as the centre of the earth
Option C. Stars move and maintain their relative positions
Option D. All the above

Question: 13. Stellar astronomy deals with

Option A. Plane surveying
Option B. Geodetic surveying

Option C. Star observations

Option D. Planet observations

Question: 14. Pick up the correct statement from the following:

Option A. The sun's right ascension increases for 0 h to 24 h when it returns to the First point of Aries

Option B. The maximum declination of the sun increases up to 23 ½° N on about 21st June

Option C. The minimum declination of the sun is zero' on 22nd September

Option D. All the above

Question: 15. From the principal point the horizon point lies on the principal line at a distance of

Option A. f tan θ

Option B. f sin θ

Option C. f cot θ

Option D. f cos θ

Question: 16. Pick up the correct statement from the following:

Option A. The star's movement is apparent due to the actual steady rotation of the earth about its axis

Option B. The stars move round in circular concentrated parts

Option C. The centre of the circular paths of stars is the celestial pole

Option D. All the above

Question: 17. Sidereal day

Option A. Is the period of time taken by the earth in making a complete rotation with reference to stars

Option B. Is slightly shorter than an ordinary solar day

Option C. Is divided into the conventional hours, minutes and seconds

Option D. All the above

Question: 18. Circumpolar stars

Option A. Rotate round the North Pole

Option B. Rotate round the celestial pole

Option C. Remain always above the horizon

Option D. Are seldom seen near the pole star

Question: 19. The product of the distances of plumb point and horizon point of a vertical photograph from its principal point, is

Option A. f^2

Option B. $2f^2$

Option C. $3f^2$

Option D. ½f

Question: 20. Triangulation surveys are carried out for locating

Option A. Control points for surveys of large areas
Option B. Control points for photogrammetric surveys
Option C. Engineering works, i.e. terminal points of long tunnels, bridge abutments, etc.
Option D. All the above

Question: 21. In triangulation surveys

Option A. The area is divided into triangular figures
Option B. Control stations are located from which detailed surveys are carried out
Option C. Sides are not measured excepting the base line
Option D. All the above

Question: 22. The latitude of a place was obtained by subtracting the declination of a star from its zenith distance, the observed star was between

Option A. Horizon and equator
Option B. Zenith and pole
Option C. Equator and zenith
Option D. Pole and horizon

Question: 23. The relation between the air base (B), photographic base (b), flying height (H) and the focal length (f) of a vertical photograph, is

Option A. B = bH/f
Option B. B =f/bH
Option C. B = b/fH
Option D. B = H/bf

Question: 24. Spring tides are caused when

Option A. Sun and moon are in line with earth
Option B. Solar tidal force acts opposite to lunar tidal force
Option C. Solar tidal force and lunar tidal force both coincide
Option D. None of these

Question: 25. The latitude of the observer's position, is

Option A. Elevation of the elevated pole
Option B. Declination of the observer's zenith
Option C. Angular distance along the observer's meridian between equator and the observer
Option D. All the above

Question: 26. The nautical mile is the length of

Option A. 1 minute of latitude

Option B. 1 minute of longitude
Option C. 1 degree of latitude
Option D. 1 degree of longitude

Question: 27. Polaris is usually observed for the determination of the latitude when it is

Option A. At culmination
Option B. At elongation
Option C. Neither at culmination nor at elongation
Option D. Either at culmination or at elongation

Question: 28. Rotation of the camera at exposure about horizontal axis normal to the line of flight, is known as

Option A. Swing
Option B. Tilt
Option C. Tip
Option D. None of these

Question: 29. The great circle which passes through the zenith, nadir and the poles, is known as

Option A. Meridian
Option B. Vertical circle
Option C. Prime vertical
Option D. None of these

Question: 30. The great circle whose plane is perpendicular to the axis of rotation of the earth, is called

Option A. Equator
Option B. Terrestrial equator
Option C. 0° latitude
Option D. All the above

Question: 31. If a star whose declination is 60° N culminates at zenith, its altitude at the lower culmination, is

Option A. 10°
Option B. 20°
Option C. 30°
Option D. 40°

Question: 32. If S is the sum of three angles of a spherical triangle, the spherical excess equals

Option A. S - 90°
Option B. S - 180°
Option C. S - 270°
Option D. S - 360°

Question: 33. The Polaris describes a small circle round the pole whose radius is approximately

Option A. 1°
Option B. 2°
Option C. 3°
Option D. 4°

Question: 34. Rotation of the camera at exposure about its vertical axis, is known as

Option A. Swing
Option B. Tilt
Option C. Tip
Option D. None of these

Question: 35. The principal line is the line joining the principal point and

Option A. Nadir
Option B. Isocenter
Option C. Perspective centre
Option D. None of these

Question: 36. The main object of the astronomer to obtain

Option A. Astronomical latitude
Option B. Astronomical longitude
Option C. Astronomical bearing
Option D. All of these

Question: 37. Assuming human normal vision distance 25 cm, smallest measurable angle 20, and intraocular distance 6.5 cm, the smallest depth to be discerned is

Option A. 0.1 mm
Option B. 0.5 mm
Option C. 1.00 mm
Option D. 1.1 mm

Question: 38. The scale of a tilted photograph of focal length f taken from an altitude H, along the plate parallel through principal point is

Option A. f/H sec θ
Option B. f sec θ/H
Option C. f/H
Option D. f/H cos ½θ

Question: 39. Accidental errors

Option A. Do not follow any definite mathematical law
Option B. Cannot be removed by applying corrections to the observed values
Option C. Are generally small

Option D. All the above

Question: 40. If the distance between the projectors is altered by a movement along X-axis of one projector,

Option A. The length of the air base is increased
Option B. The scale of the model is altered
Option C. y-parallax is not affected
Option D. All the above

Question: 41. Pick up the correct statement from the following:

Option A. The horizontal direction of the pole is called astronomical north
Option B. The angle between the direction of true north and the direction of a survey line is called astronomical bearing
Option C. The astronomical bearing is generally called azimuth
Option D. All the above

Question: 42. Pick up the correct statement from the following:

Option A. If the applied tension to the tape is more than the standard, the tension correction is positive
Option B. If the applied tension to the tape is less than the standard, the tension correction is negative
Option C. If the temperature during measurement is greater than the standard temperature, the temperature correction is positive
Option D. All the above

Question: 43. The orthogonal projection of the perspective centre on a tilted photograph, is called

Option A. Nadir
Option B. Isocenter
Option C. Principal point
Option D. Plumb point

Question: 44. The angle between the axis of earth and the vertical at the station of observation is called

Option A. Astronomical latitude
Option B. Astronomical co-latitude
Option C. Co-declination of star
Option D. Declination of star

Question: 45. To have greatest coverage of the area, the type of photography used, is

Option A. High oblique
Option B. Low oblique
Option C. Vertical
Option D. None of these

Question: 46. The distance between the projection centre and the photograph, is called

Option A. Principal distance
Option B. Principal line
Option C. Isocentric distance
Option D. Focal length

Question: 47. The elevation of the star at elongation is obtained by

Option A. $\sin \alpha = \sin \varphi \operatorname{cosec} \delta$
Option B. $\sin \alpha = \sin \varphi \sec \delta$
Option C. $\sin \alpha = \cos \varphi \sec \delta$
Option D. $\sin \alpha = \cos \varphi \operatorname{cosec} \delta$

Question: 48. The height displacement on a vertical photograph

Option A. Increases as the horizontal distance increases from the principal point
Option B. Increases as the ground elevation increases
Option C. Decreases as the flying height increases
Option D. All the above

Question: 49. The Polaris remains below horizon at

Option A. 10° N
Option B. 50° N Latitude
Option C. Equator
Option D. 5° S latitude

Question: 50. Pick up the in-correct statement from the following:

Option A. Apparent solar time is measured from the lower transit of the true sun
Option B. Mean solar time is measured from the lower transit of the mean sun
Option C. Sidereal time is measured from the lower transit of the first point of Aries
Option D. Sidereal time is measured from the upper transit of the first point of Aries

Question: 51. At lower culmination, the pole star moves

Option A. Eastward
Option B. Westward
Option C. Northward
Option D. Southward

Question: 52. The sidereal day is the time interval between two successive upper transits of

Option A. Mean sun
Option B. First point of Aries
Option C. First point of Libra
Option D. The polar star

Question: 53. Pick up the incorrect statement from the following. In a spherical triangle

Option A. Every angle is less than two right angles
Option B. Sum of the three angles is equal to two right angles
Option C. Sum of the three angles less than six right angles and greater than two right angles
Option D. Sum of any two sides is greater than the third

Question: 54. Limiting gradient for locating the base line on evenly-sloping ground, is

Option A. 1 in 12
Option B. 1 in 10
Option C. 1 in 8
Option D. 1 in 6

Question: 55. 23 cm × 23 cm photographs are taken from a flying height with a camera of focal length of 3600 m and 15.23 cm respectively. A parallax difference of 0.01 mm represents

Option A. 1 m
Option B. 2 m
Option C. 4 m
Option D. 8 m

Question: 56. The time interval between successive transits of the moon, is

Option A. 24 hours 10 minutes
Option B. 20 hours 25 minutes
Option C. 24 hours 50 minutes
Option D. 23 hours 50 minutes

Question: 57. Places having same latitude

Option A. Lie on the parallel of the latitude
Option B. Are equidistant from the nearer pole
Option C. Are equidistant from both the poles
Option D. All the above

Question: 58. The meridian of a place is

Option A. A great circle passing through the place and the poles
Option B. A great circle whose plane is perpendicular to the axis of rotation and it also passes through the place
Option C. A semi-circle which passes through the place and is terminated at the poles
Option D. An arc of the great circle which passes through the place and is perpendicular to the equator

Question: 59. The point at which sun's declination changes from north to south, is known as

Option A. First point of Aeries
Option B. First point of Libra

Option C. Vernal Equinox
Option D. Both (b) and (d) of the above

Question: 60. Invar tapes used for measuring base lines, is made of nickel-iron alloy containing nickel

Option A. 24 %
Option B. 36 %
Option C. 40 %
Option D. 60 %

Question: 61. The relief displacement of a building 72 m high on photograph is 7.2 mm and its top appears 10 cm away from principal point. The flying height of the camera, is

Option A. 500 m
Option B. 1000 m
Option C. 1500 m
Option D. 2000 m

Question: 62. The true and mean suns occupy the same meridian at the same time on

Option A. April 15
Option B. June 14
Option C. September 1
Option D. All the above

Question: 63. The coverage is least if photography is

Option A. High oblique
Option B. Low oblique
Option C. Vertical
Option D. None of these

Question: 64. According to Napier's Rules of circular parts for a right angled triangle, sine of middle part equals the product of

Option A. Tangents of two adjacent parts
Option B. Sines of two adjacent parts
Option C. Cosines of two adjacent parts
Option D. Both (a) and (b) above

Question: 65. The principal plane contains

Option A. Nadir point
Option B. Iso centre
Option C. Principal point
Option D. All the above

Question: 66. The maximum error in radial line assumption, is

Option A. h/H f tan θ

Option B. h/H f^2 tan θ

Option C. h/H f^2 sin θ

Option D. h/H f cos θ

Question: 67. The station where observations are not made, but the angles at the station are used in triangulation series, is known as

Option A. Satellite station

Option B. Subsidiary station

Option C. Pivot station

Option D. Main station

Question: 68. Perspective centre relates to

Option A. Parallel projection

Option B. Orthogonal projection

Option C. Central projection

Option D. None of these

Question: 69. The equation which is obtained by multiplying each equation by the coefficient of its un-knowns and by adding the equations thus formed, is known as

Option A. Observation equation

Option B. Conditional equation

Option C. Normal equation

Option D. None of these

Question: 70. The displacement of the pictured position of a point of h elevation on a vertical photograph taken with a camera of 30 cm focal length, from an altitude of 3000 m, is

Option A. 4.4 mm

Option B. 5.5 mm

Option C. 6.5 mm

Option D. 7.5 mm

Question: 71. Latitude of a place is the angular distance from

Option A. Greenwich to the place

Option B. Equator to the poles

Option C. Equator to the nearer pole

Option D. None of these

Question: 72. Latitude of the observer's position is equal to altitude of

Option A. North pole

Option B. Pole star

Option C. Celestial pole

Option D. All the above

Question: 73. The circle in which a plane tangent to the earth's surface at the point of observation, intersects the celestial sphere, is called

Option A. Visible horizon
Option B. Sensible horizon
Option C. Celestial horizon
Option D. True horizon

Question: 74. The correction applied to the measured base of length L is

Option A. Tension = (P - Ps)L/AE
Option B. Sag = $L^3w^2/24P^2$ where w is the weight of tape/m
Option C. Slope = $(h^2/2L) + (h^4/8L^3)$ where h is height difference of end supports
Option D. All the above

Question: 75. The flying height of the camera is 1, 000 m above mean ground level, the distance of the top of a building from a nadir point is 10 cm and the relief displacement of building is 7.2 mm. The height of the building, is

Option A. 52 m
Option B. 62 m
Option C. 72 m
Option D. 82 m

Question: 76. If E is the spherical excess and R the radius of the earth, the surface area of the triangle, is

Option A. $\pi R^2E/90°$
Option B. $\pi R^2E/180°$
Option C. $\pi R^2E/270°$
Option D. $\pi R^2E/360°$

Question: 77. In a spherical triangle ABC, right angled at C, sin b equals

Option A. sin a cos A
Option B. cos a sin A
Option C. tan a cot A
Option D. cot A tan a

Question: 78. The stereo plotting instruments are generally manufactured on the principle of

Option A. Optical projection
Option B. Optical mechanism projection
Option C. Mechanical projection
Option D. All the above

Question: 79. The declination and right ascension of the sun becomes 23° 27' S and 270° respectively on

Option A. March 21
Option B. June 21
Option C. September 21
Option D. December 22

Question: 80. The point where vertical line passing through the perspective centre intersects the plane of the photograph, is known as

Option A. Photo plumb point
Option B. Plumb point
Option C. Nadir point
Option D. Isocenter

Question: 81. G.M.T. corresponding to given mean time, equals

Option A. L.M.T. - East longitude in time
Option B. L.M.T. + East longitude in time
Option C. L.M.T. - West longitude in time
Option D. None of these

Question: 82. Pick up the correct statement from the following:

Option A. The angle between the plane of the negative and the horizontal plane containing perspective axis is the tilt of the photograph
Option B. The direction of maximum tilt is defined by the photo principal line
Option C. The principal plane is truly vertical plane which contains perspective centre as well as principal point and plumb point
Option D. All the above

Question: 83. When a star is between the pole and the horizon, the relationship between latitude ($\boldsymbol{\lambda}$), zenith distance (z) and declination $\boldsymbol{\delta}$, is

Option A. $\theta = z + \delta$
Option B. $\theta = \delta - z$
Option C. $\theta = 180° - (z + \delta)$
Option D. $\theta = (z + \delta) - 180°$

Question: 84. Pick up the incorrect statement from the following:

Option A. In truly vertical photographs without relief angles are true at the plumb point
Option B. In tilted photographs without relief, angles are true at the iso-centre
Option C. In tilled photographs with relief, angles are true at the principal point
Option D. None of these

Question: 85. The latitude of a place was obtained by subtracting the zenith distance of a star from its declination, the observed star was between

Option A. Horizon and equator
Option B. Equator and zenith

Option C. Zenith and pole
Option D. Pole and horizon

Question: 86. The want of correspondence in stereo-photographs

Option A. Is a good property
Option B. Is a function of tilt
Option C. Is not affected by the change of flying height between photographs
Option D. Is minimum when θ is 3°

Question: 87. Homologous point is

Option A. Photo principal point
Option B. Ground principal point
Option C. Ground isocenter
Option D. All the above

Question: 88. Pick up the incorrect statement from the following. The angular distance of heavenly bodies on observer's meridian measured from the pole, is

Option A. Co-declination
Option B. Co-altitude
Option C. Co-latitude
Option D. Polar distance

Question: 89. If **δ** is the declination of the star and **φ** is the latitude of the observer then the hour angle of the star at elongation is given by

Option A. sin H = tan φ . cot δ
Option B. cos H = tan φ . cot δ
Option C. tan H = tan φ . cot δ
Option D. None of these

Question: 90. The hour angle of the heavenly body for Greenwich meridian equals the hour angle of the body for any other meridian + longitude:

Option A. Mean sun
Option B. True sun
Option C. Vernal equinox
Option D. All the above

Question: 91. At the first point of Aeries, the sun moves

Option A. Northward
Option B. Southward
Option C. From south to north of the equator
Option D. From north to south of the equator

Question: 92. The zenith is the point on the celestial sphere

Option A. East of observer
Option B. West of observer
Option C. North of observer
Option D. South of observer

Question: 93. The great circle along which the sun appears to trace on the celestial sphere with earth as centre during the year, is called

Option A. Equator
Option B. Celestial equator
Option C. Ecliptic
Option D. None of these

Question: 94. The angle between the plane of the equator and the plane of the ecliptic, is known as obliquity of the ecliptic and its value is

Option A. 22° 30'
Option B. 23° 27'
Option C. 23° 30'
Option D. 24° 0'

Question: 95. If **δ** is the declination of the star and **φ** is the latitude of the observer, then the azimuth of the star at elongation is given by

Option A. sin z = sec φ . cos δ
Option B. cos z = sec φ . cos δ
Option C. tan z = sec φ . cos δ
Option D. None of these

Question: 96. Pick up the correct statement from the following:

Option A. Aerial photographs may be either vertical or oblique
Option B. Vertical photographs are taken with the axis of camera pointing vertically downward
Option C. Vertical photographs are used for most accurate maps
Option D. All the above

Question: 97. For plane ground the scale of a vertical photograph will be same as that of a tiled photograph along the photo parallel through

Option A. Isocenter
Option B. Plumb point
Option C. Principal point
Option D. None of these

Question: 98. An aerial photograph may be assumed as

Option A. Parallel projection
Option B. Orthogonal projection
Option C. Central projection

Option D. None of these

Question: 99. The parallax of a point on the photograph is due to

Option A. Ground elevation

Option B. Flying height

Option C. Length of air base

Option D. All the above

Question: 100. If **θ** and **δ** be the latitude of an observer and declination of a heavenly body respectively, the upper culmination of the body will be south of zenith if its zenith distance, is

Option A. δ - θ

Option B. θ - δ

Option C. θ + δ

Option D. ½ (θ - δ)

Answer Sheet

1	D	
2	D	
3	A	
4	D	
5	A	
6	D	
7	D	
8	D	
9	D	
10	D	
11	B	
12	D	
13	C	
14	D	
15	A	
16	D	
17	D	
18	C	
19	A	

20	D	
21	D	
22	A	
23	A	
24	C	
25	D	
26	B	
27	A	
28	C	
29	A	
30	D	
31	C	
32	B	
33	A	
34	A	
35	B	
36	D	
37	A	
38	A	
39	D	
40	D	
41	D	
42	D	
43	C	
44	B	
45	A	
46	A	
47	A	
48	D	
49	D	

50	D	
51	A	
52	B	
53	B	
54	A	
55	A	
56	C	
57	D	
58	C	
59	D	
60	B	
61	B	
62	D	
63	C	
64	D	
65	D	
66	A	
67	C	
68	C	
69	C	
70	D	
71	D	
72	C	
73	B	
74	D	
75	C	
76	B	
77	C	
78	D	
79	D	

80	A	
81	A	
82	D	
83	C	
84	C	
85	C	
86	B	
87	D	
88	A	
89	B	
90	D	
91	C	
92	D	
93	C	
94	B	
95	A	
96	D	
97	A	
98	C	
99	D	
100	B	